

Leaf Lettuce Cultivation Technology, Zoned and Widespread Varieties

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Abstract: Lettuce grows well in soils rich in various nutrients. Lettuce prefers soils with organic and mineral fertilizers. If the soil is well fertilized, lettuce can be planted after potatoes, cucumbers, peas, and tomatoes. If you plant radishes and radishes, then the salad will not work. For growing lettuce seedlings, a substrate is prepared, consisting of one part of humus or compost, two parts of humus-rich soil and one part of sand.

For growing leafy vegetables, 400-500 grams per hectare of class I seeds with a purity of 98% and a yield of at least 85%.

Keywords: class I seeds, seedlings, care, sowing scheme, zoned varieties, sowing dates.

Introduction. In recent years, in order to ensure food security, fully meet the needs of the population in vegetables and planting export-oriented crops that are in demand in the domestic and foreign markets, diversifying agriculture, more land and water resources, large-scale measures have been taken to increase incomes through the rational use and cultivation of export-oriented products. In the Action Strategy for the Further Development of the Republic of Uzbekistan for 2017-2021, the optimization of arable land and the composition of crops in agriculture, the introduction of advanced agricultural technologies and increasing yields, increasing vegetable production are identified as one of the important strategic tasks. Therefore, developments aimed at a radical increase in the quality and productivity of vegetable crops require widespread introduction into agriculture.

In early spring, it is important to provide our people with fortified salads, dill, parsley and celery. These plants contain organic acids, essential oils and vitamins A, B, B₂, C, E, necessary for the normal development of the human body.

Among the many vegetable crops grown in Uzbekistan in a good climate, lettuce occupies an important place. In 2010, 4,000 tons of lettuce were grown on 200 hectares of land in the country, and by 2020, more than 5,249 tons of crops were grown on 493 hectares. Based on these data, in our country, along with vegetable crops, there is a growing interest in lettuce.

The Latin name for lettuce is *Lactuca Sativa*, which belongs to the Compositae family. Lettuce is a popular crop in Europe. It came to Europe in the XVI th century and to Russia at the end of the XVII th century. Salad in Uzbekistan is given very little attention. In particular, it accounts for only 1 percent of vegetable production. However, some curious landowners, farmers and ranchers grow lettuce. It is also possible to supply cervitamin lettuce to the population in early spring with little labor and expense, without the emergence of seedlings of other vegetable crops. The human body needs to consume 18-20 kg of green crops per capita per year, or 16.5% of all vegetable production. Of these, 3% are lettuce leaves.

In many European, American and Asian countries, lettuce, like other vegetables, is widely eaten on a regular basis. Lettuce is dietary, cold-resistant, fast-cooking, inexpensive, gives 2-3 times more fresh blue mass than other vegetables before consumption, is of high quality and low cultivation costs in many countries.

Consumption in the consumer market is created by products produced and imported into the country. Therefore, it is necessary to determine which types of food crops to grow and which to import, taking into account soil and climatic conditions. To do this, you need to know the ratio of animal and vegetable products in the diet.

Currently, 80-90% of the population in almost all countries do not have normal health. The main reason for this is a violation of the nutrition structure, ie a lack of vitamins, mineral salts, antioxidants and biologically active substances, etc. In the population of all ages. That's why it's important to eat nutrient-dense foods.

The abundance of vegetables is due to their consumption and medicinal properties. They contain carbohydrates, proteins and fats, which provide additional nutrients to the human body. The nutritional value of most vegetables is 150-400 kcal per 1 kg. Due to the high content of biologically active substances (vitamins, mineral salts, pectins, enzymes, organic acids, essential oils, phytoncides), they are very tasty and have healing properties. Nowadays, there is less physical activity and movement, and the nutritional value of vegetables increases by reducing daily energy costs. In addition, recent pollution of air, water and food with toxic substances has put the human body at risk of poisoning. Eating vegetables regulates metabolism and makes the body healthier.

Level of understanding of the problem. Research on the selection of leaf lettuce varieties in different countries of the world, the study of the influence of varieties on growth, development and productivity G.A. Sekhanovskaya, V.M. Markov, M.A. Borushko, A.B. Bakiev, S. Maksamov, N.V. Leshchuk, K.M. Krivitsky, N.V. Meister, I.B. Kutovenko, G.S. Osipov, V. M.Kondratiev, K.R. Extensive research was carried out by Popko, N.V. Tikhaya, I.V. Litvin, N.P. Kostenko, S.V. Lyubov and many other scientists. One can list a number of scientists who conducted such studies and played an important role in the development of vegetable growing in Uzbekistan, including M. Aramov, N.N. Balashov, S. Bakuras, A.M. Shkuro, P.F. Pimakov, R. Mavlyanova, V.O. Extensive research was carried out by such scientists as Serkova and Z.T. Bustanov. The authors have developed a guide for the selection of lettuce varieties for outdoor cultivation. Recommendations are given on the optimal planting dates, planting patterns, irrigation and fertilization criteria for growing lettuce in open ground, as well as in greenhouses.

Know When to Plant Lettuce. Lettuce grows well in soils rich in various nutrients. Lettuce prefers soils with organic and mineral fertilizers. If the soil is well fertilized, lettuce can be planted after potatoes, cucumbers, peas, and tomatoes. If you plant radishes and radishes, then the salad will not work. Land prepared for planting lettuce should be well cultivated and fertilized. In such areas, high yields of lettuce can be obtained only with the use of mineral fertilizers. But if the soil is weak and hard, then in addition to mineral fertilizers, it is necessary to add the required amount of manure. The combined use of organic and mineral fertilizers helps to provide the lettuce plant with nutrients. However, it is necessary to use organic and mineral fertilizers in half doses.

When applying mineral fertilizers, it is necessary to determine the quality of the soil, the high alkali content, with an increase in pH, the lettuce will grow poorly. Permissible alkali content 6-7. Therefore, if mineral fertilizers are not applied to such lands, they should be applied during spring mowing.

Before plowing in autumn, the field is filled with 10 tons of manure and pure phosphate fertilizers from superphosphate and potash fertilizers - R_2O_5 - 75 kg/ha, K_2O - 40 kg/ha. Then the main plowing is done to a depth of 28-30 cm.

The sown areas will be carefully cleared of the remnants of the last crop and weeds. 15.0–20.0 tons of rotted manure is applied per 1 ha. The soil is loosened to a depth of 20-25 cm. Large lumps are crushed, leveled and irrigated.

Growing seedlings. 400-500 grams per hectare is sufficient to produce seedlings from class I seeds with a purity of 98% and a germination rate of 85% of the above varieties.

For growing lettuce seedlings, a substrate is prepared, consisting of one part of humus or compost, two parts of humus-rich soil and one part of sand.

Then, for 10 liters of this mixture, add 10 cups of ash and one cup of quicklime. The prepared substrate is placed in boxes, and the seeds of tomorrow's salad are sown in these boxes in rows of 1-2 cm to a depth of 1 cm. The boxes are covered with foil from above until the seeds germinate. The boxes will be placed in a bright place.

The seeds sown and treated in this way are sown in warm or semi-greenhouses in December for the next harvest, and the average lettuce is sown in late March or early April. It is best to keep the temperature at +15+20°C, then +18 to 27°C until the plants sprout.

If necessary, seedlings are thinned out, fed during the growing season, watered, weeded and transferred to open ground after the formation of 4-5 leaves. Lettuce is usually planted in irrigated areas or watered before and after transplanting. This work is carried out 2-3 times until the seedlings pull up, continue to grow and develop.

Dates and scheme of sowing. Lettuce seeds are sown in open ground in early spring - late February - early March and in autumn in the second half of September in October in rows or rows in 2-3 rows. In some cases, these plants are even transplanted. An arch 70 cm wide is taken. The distance between rows is 15-20 cm, the distance between seedlings is 8-10 cm. Seeds are sown to a depth of 0.5-1.0 cm. Lettuce seeds are sown at the rate of 4.0-5.0 kg per hectare. The sown seeds are mixed with hashish into the soil.

Care. The planted area should be watered regularly. After 2-3 days, the branches are inspected and transplanted to the wrong places. After all the seedlings are planted, the fields are cultivated, the area around the seedlings is loosened and the first fertilizer is applied. The second cultivation is carried out after watering.

Lettuce is very picky about soil fertility and mineral fertilizers. On serozems irrigated for a long time, an average of 150 kg of nitrogen, 100 kg of phosphorus and 50 kg of potassium should be applied. When grown on meadow and meadow-marsh soils, an average of 120 kg of nitrogen, 80 kg of phosphorus and 60 kg of potassium should be applied per hectare.

Lettuce is recommended to be watered 6-8 times on gray soils and 5-6 times on shallow groundwater. Irrigation rate is 500-550 m³/ha. The moisture content of the field is 65-70% relative to the capacity, and given the humidity, the soil should not be watered until the moisture has evaporated, but excess moisture can cause root rot. The fight against pests and diseases during the growing season is carried out when plants are damaged. Pre-harvest watering and top dressing are not recommended.

Growing lettuce in greenhouses. In Uzbekistan, in winter greenhouses heated with glass or film, lettuce is grown only between winter cucumbers and tomatoes, as well as on additional areas. It is planted on the slope (bokeh) of branches 2-3 days before sowing cucumbers and tomatoes. On 4-6 rows of tapes, the distance is 5 cm. The landing rate is 1-2 g / m². Lettuce planted in January will ripen in 40-45 days.

In unheated greenhouses covered with a film, lettuce is grown in its pure form until the planting of spring heat-loving crops, temporarily covered with a film. It can also be planted as a compact crop. In the central zone of the republic, lettuce is planted in the first decade of February in the places indicated above.

To grow lettuce, temporarily covered with a film, the mechanical composition is divided into areas with light soils. Since autumn, the soil is filled with humus or compost (at the rate of 50-60 t/ha), superphosphate (150 kg/ha), potassium chloride (50-55 kg/ha). The soil is cultivated before planting. In early spring, seeds are sown manually or in a greenhouse at the rate of 1.5-2 g of seeds per 1 m². Then the manure is spread thinly and covered with a film.

Sometimes lettuce seedlings are planted in greenhouses after the end of daylight hours (at the end of January). The distance between the rows is 6-7 cm. 6-7 g of seeds are sown under each row. After removing the grass, it is rolled up and left between plants 5-6 cm. When planting lettuce in its pure form, the temperature is initially maintained at around $+12 + 14^{\circ}\text{C}$. Relative humidity should not exceed 80%. Lettuce leaves should be watered thoroughly, otherwise the leaves will rot. However, in some cases, watering is required. Then the excess water is removed. Feed 1-2 times with ammonium nitrate (at the rate of 40-50 g per 10 liters of water).

When the lettuce produces 7-10 true leaves, once or twice: the first time, well-developed leaves are removed, the second time, all remaining leaves are removed. The yield of lettuce when planted with a compactor is 0.8 - 0.9 kg / m², when planted in its pure form - 2-2.5 kg / m².

Recommended varieties for planting



KO'K-ShOX

Early ripe variety, growing season 54 days. The leaves are medium, smooth, juicy, with finely serrated edges, green, tasting score 4.8 points. Productivity is 2.1-3.2 kg/m². Resistant to diseases and pests.

LEVISTRO F₁

Forms large, glossy, strongly corrugated leaves. The average ripening period is from 60 to 80 days. In summer it is recommended to grow outdoors. This hybrid is resistant to common diseases. The hybrid is hardy in transportation and retains its freshness for a long time.



KONKORD F₁

Duragey belongs to the genus Lolla Rossa, the color of the leaves is bright black. Suitable for growing in open areas and protected areas. The average weight of the plant is 500 g. Duragey is resistant to powdery mildew.

In order to obtain seeds, four bushes per meter are left in the area where the lettuce is planted, or a separate sowing area is planted with a width (50-80 cm between rows). At the same time, 2 kg of seeds are sown per hectare.

Seed fields should be 300 m apart in open fields and 100 m apart in protected fields. In the first half of the growing season, lettuce is fed with nitrogen when the gray mass begins to accumulate, and with phosphorus when it begins to produce flowers. The growing season (from lettuce to ripening) lasts 110-180 days. Since the seeds do not ripen at the same time, they ripen and fall off. Therefore, in small areas, the harvest is harvested one by one, depending on the ripening of the seeds, and in large areas, immediately in the morning or in the evening. The collected seeds are tied up in the garden, dried in a threshing floor or warehouse and ground. Seeds are harvested in 2-4 hours per hectare.

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